

**AMENDMENTS TO THE CLAIMS**

**Please amend the claims as follows.**

1. (Currently Amended) A computer-readable medium holding instructions executable in a computing device, the medium comprising one or more instructions for:

~~instructions for generating an expected~~ a result from executing a model of a biological process with a simulation engine;

~~instructions for gathering data directly from an in situ experimental device on which an ongoing in situ experiment of the biological process is conducted; on an experimental device and~~

comparing the ~~expected-generated~~ result to the data gathered from ~~said the~~ experimental device with an analysis environment that is in communication with ~~said the~~ simulation engine;

~~instructions for modifying the model of the biological process based on the data gathered from the in situ experiment~~ comparison to correct the model of the biological process; and

~~instructions for saving the modified model in a storage or displaying the modified model on a display device.~~

2. (Currently Amended) The medium of claim 1 wherein ~~said the~~ analysis environment outputs results of analysis performed by the analysis environment.

3. (Currently Amended) The medium of claim ~~2~~ 1 wherein ~~the analysis environment includes a graphical display for further comprising:~~

displaying at least one of the ~~expected~~ result generated by ~~said the~~ simulation engine ~~and or the experimental~~ data gathered from the experimental device.

4. (Currently Amended) The medium of claim 1, further comprising one or more instructions for:

determining a difference between the result and the data gathered from the experimental device; and

~~wherein said analysis environment generates~~ generating an event signal when the difference between the ~~expected result generated by the simulation engine~~ and the data gathered from the experimental device exceeds a predetermined threshold.

5. (Currently Amended) The medium of claim 1 further comprising one or more instructions for constructing ~~a~~the model of the biological process with a modeling environment.

6. (Currently Amended) The medium of claim 5 wherein ~~said~~the modeling environment includes a graphical user interface for accepting at least one of user commands ~~and~~ or data to construct ~~a~~the model of the biological process.

7. (Currently Amended) The medium of claim 5 wherein ~~said~~the analysis environment is in communication with ~~said~~the modeling environment.

8. (Currently Amended) The medium of claim ~~6~~7 wherein the analysis environment transmits to the modeling environment the data gathered from the experimental device.

9. (Currently Amended) The medium of claim 8 wherein the modeling environment uses the transmitted data to refine the ~~generated~~ model of the biological process.

10. (Currently Amended) The medium of claim 1 wherein ~~said~~the analysis environment ~~gather~~gathers data from a microarray.

11. (Previously Presented) The medium of claim 1, further comprising one or more instructions for gathering data from a gene chip.

12. (Currently Amended) A method for modifying a model of a biological process ~~responsive to experimental results generated by an in situ experiment conducted on an experimental device~~, the method comprising:

- ~~(a) conducting an in situ experiment;~~
- ~~(b) accessing, by a simulation engine,~~ a model of the biological process;
- ~~(c) generating, by the simulation engine, an expected result based on~~ from an execution of the model of the biological process;

~~(d) gathering data relating to the experiment directly from an in situ experimental device on which an ongoing in situ experiment is conducted;~~

~~(e) comparing, by an analysis environment, the generated expected result to the data gathered from said the ongoing in situ experiment; and~~

~~(f) modifying the model of the biological process based on the data relating to the experiment comparison to correct the model of the biological process;~~

~~, wherein saving the modified model is saved in a storage or displaying the modified model on a display device.~~

13. (Currently Amended) The method of claim 12 further comprising displaying, ~~by the analysis component,~~ at least one of the expected-generated result generated by said simulation engine and or the experimental data gathered from said the experimental device.

14. (Currently Amended) The method of claim 13 wherein displaying comprises graphically displaying the at least one of the expected-generated result generated by said simulation engine and or the experimental data gathered from said the experimental device.

15. (Currently Amended) The method of claim 13 further comprising:  
determining a difference between the result and the data gathered from the experimental device; and

generating an event signal when the difference between the generated, ~~expected~~ result and the gathered data exceeds a predetermined threshold.

16. (Currently Amended) The method of claim 12 further comprising accepting, ~~via a modeling environment,~~ at least one of user commands ~~and or~~ data to construct a the model of the biological process.

17. (Currently Amended) The method of claim 16 wherein ~~the modeling environment accepts the~~ at least one of user commands ~~and or~~ data is accepted via a graphical user interface.

18. (Currently Amended) The method of claim 16 further comprising transmitting the gathered data to ~~the~~ a modeling environment configured to model the biological process.

19. (Currently Amended) The method of claim ~~16~~ 18 further comprising generating, by the modeling environment, a refined model of the biological process using the transmitted data.

20. (Currently Amended) The method of claim 12 wherein conducting further comprises conducting ~~an~~ the in situ experiment using a microarray.

21. (Currently Amended) The method of claim 12 wherein conducting further comprises conducting ~~an~~ the in situ experiment using ~~an experimental device~~ a gene chip.

22. (Currently Amended) An ~~article of manufacture~~ apparatus comprising:

~~computer readable program~~ means for accessing a model of a biological process;

~~computer readable program~~ means for generating ~~an expected~~ result ~~based on~~ from an execution of the model of the biological process;

~~computer readable program~~ means for gathering data directly from an in situ experimental device on which relating to an ongoing in situ experiment of the biological process is conducted on an experimental device;

~~computer readable program~~ means for comparing the generated ~~expected~~ result to the data gathered from ~~said the~~ experimental device; ~~and~~

~~computer readable program~~ means for modifying the model of the biological process based on the ~~data gathered from said experimental device~~ comparison to correct the model of the biological process; and

~~wherein~~ means for saving the modified model is saved in a storage or displaying the modified model on a display device.

23. (Currently Amended) The ~~article of manufacture~~ apparatus of claim 22 further comprising ~~computer readable program~~ means for displaying at least one of the expected result ~~and or the experimental~~ data gathered from ~~said the~~ experimental device.

24. (Currently Amended) The ~~article of manufacture~~ apparatus of claim 22 further comprising:

means for determining a difference between the result and the data gathered from the experimental device; and

~~computer-readable program~~ means for triggering an alarm when the difference between the generated, ~~expected~~ result and the gathered data exceeds a predetermined threshold.

25. (Currently Amended) The ~~article of manufacture~~ apparatus of claim 22 further comprising ~~computer-readable program~~ means for accepting at least one of user commands ~~and~~ or data to construct a the model of the biological process.

26. (Currently Amended) The ~~article of manufacture~~ apparatus of claim 22 ~~further comprising computer-readable program means for accepting wherein the at least one of~~ user commands ~~and or~~ data is accepted via a graphical user interface ~~to construct a model of the biological process.~~

27. (Currently Amended) The ~~article of manufacture~~ apparatus of claim 22 further comprising ~~computer-readable program~~ means for generating a refined model of the biological process using the data gathered from the experimental device.

28. (Currently Amended) A computer-readable medium holding instructions executable in a computing device, the instructions comprising one or more instructions for:

~~instructions for generating an expected a~~ result from executing a model of a biological process ~~with a simulation engine;~~

~~instructions for gathering data directly from an in situ experimental device on which an ongoing in situ experiment of the biological process is conducted on an experimental device and;~~

comparing the ~~expected~~ result to the data gathered from ~~said the~~ experimental device ~~with an analysis environment that is in communication with said simulation engine;~~

~~instructions for modifying the model of the biological process based on the data from the in situ experiment~~ comparison; and

~~instructions for saving the modified model in a storage or displaying the modified model on a display device.~~

29. (Currently Amended) The medium of claim 28 further comprising one or more instructions for:

displaying wherein said analysis environment displays at least one of the expected generated result generated by said simulation engine and or the experimental data gathered from the experimental device.

30. (Currently Amended) The medium of claim 29 wherein ~~the analysis environment includes a graphical display for displaying the~~ at least one of the generated expected result generated by said simulation engine and or the experimental data gathered from the experimental device is displayed in a graphical display.

31. (Currently Amended) The medium of claim 28 further comprising one or more instructions for wherein said analysis environment further comprises triggering an alarm that is triggered when the difference between the expected generated result generated by the simulation engine and the data gathered from the experimental device exceeds a predetermined threshold.

32. (Previously Presented) The medium of claim 28 further comprising one or more instructions for constructing a model of the biological process with a modeling environment.

33. (Currently Amended) The medium of claim 32 wherein ~~said the modeling environment includes a graphical user interface and the medium further comprises one or more instructions for accepting at least one of user commands and or data to construct a the model of the biological process via the graphical user interface.~~

34. (Currently Amended) The medium of claim 32 wherein ~~said the comparing is performed in an analysis environment and the analysis environment is in communication with said the modeling environment.~~

35. (Previously Presented) The medium of claim 34 wherein the analysis environment transmits to the modeling environment the data gathered from the experimental device.

36. (Previously Presented) The medium of claim 35 wherein the modeling environment uses the transmitted data to refine the generated model of the biological process.

37. (Withdrawn) A method for modifying a model of a chemical reaction ~~responsive to experimental results generated by an in situ experiment conducted on an experimental platform,~~ the method comprising ~~the steps of:~~

- ~~(a) conducting an in situ experiment;~~
- ~~(b) accessing, by a simulation engine, a model of the chemical reaction;~~
- ~~(c) generating, by the simulation engine, an expected result based on from executing the model of the chemical reaction;~~
- ~~(d) gathering data relating to the an chemical ongoing in situ experiment directly from an in situ experimental device on which the in situ experiment is being conducted; and~~
- ~~(e) comparing, by an analysis environment, the generated expected result to the data gathered from said the in situ experimental platform device;~~  
modifying the model of the chemical reaction based on the data relating to the ongoing experiment to correct the model of the chemical reaction; and  
saving the modified model in a storage or displaying the modified model on a display device.

38. (Withdrawn) The method of claim 37 further comprising ~~the step of~~ displaying, by the analysis environment, at least one of the expected result generated by said the simulation engine and or the experimental data gathered from said the experimental platform device.

39. (Withdrawn) The method of claim 38 wherein ~~the step of~~ displaying comprises graphically displaying at least one of the expected result generated by said the simulation engine and or the experimental data gathered from said the experimental platform device.

40. (Withdrawn) The method of claim 37 further comprising: ~~the step of~~

determining a difference between the generated result and the data gathered from the experimental device; and

triggering an alarm when the difference between the generated, ~~expected~~ result and the gathered data exceeds a predetermined threshold.

41. (Withdrawn) The method of claim 37 further comprising ~~the step of~~ accepting, via a modeling environment, at least one of user commands ~~and or~~ data to construct a the model of the chemical reaction.

42. (Withdrawn) The method of claim 41 wherein the modeling environment accepts the at least one of user commands ~~and or~~ data via a graphical user interface.

43. (Withdrawn) The method of claim 41 further comprising ~~the step of~~ transmitting the gathered data to the modeling environment.

44. (Withdrawn) The method of claim ~~41-43~~ further comprising ~~the step of~~ generating, by the modeling environment, a refined model of the chemical reaction using the transmitted data.

45. (Withdrawn) An ~~article of manufacture having embodied thereon~~ computer-readable medium holding instructions executable in a computing device, the instructions comprising one or more instructions for ~~program means for~~ modifying a model of a chemical reaction responsive to experimental results generated by an in situ experiment conducted on an experimental platform, ~~the article of manufacture comprising:~~

~~computer readable program means for~~ accessing a model of the chemical reaction;

~~computer readable program means for~~ generating an ~~expected~~ result based on from executing the model of the chemical reaction;

~~computer readable program means for~~ gathering data relating to ~~the chemical~~ an ongoing in situ experiment of the chemical reaction directly from an in situ experimental device on which the ongoing in situ experiment is conducted; and



~~computer-readable program means for comparing the generated expected result to the~~  
data gathered from said ~~the~~ experimental platform device;

modifying the model of the chemical reaction based on the data relating to the ongoing  
experiment to correct the model of the chemical reaction; and

saving the modified model in a storage or displaying the modified model on a display  
device.

46. (Withdrawn) The ~~article of manufacture~~ computer-readable medium of claim 45 further comprising one or more instructions for ~~computer-readable program means for~~ displaying at least one of the expected generated result and or the experimental data gathered from said ~~the~~ experimental platform device.

47. (Withdrawn) The ~~article of manufacture~~ computer-readable medium of claim 45 further comprising one or more instructions for:

determining a difference between the result and the data gathered from the experimental  
device; and

~~computer-readable program means for~~ triggering an alarm when the difference between the generated, ~~expected~~ result and the gathered data exceeds a predetermined threshold.

48. (Withdrawn) The ~~article of manufacture~~ computer-readable medium of claim 45 further comprising ~~computer-readable program means~~ one or more instructions for accepting at least one of user commands ~~and or~~ data to construct ~~a the~~ model of the chemical reaction.

49. (Withdrawn) The ~~article of manufacture~~ computer-readable medium of claim 45 further comprising ~~computer-readable program means~~ one or more instructions for accepting at least one of user commands ~~and or~~ data via a graphical user interface to construct ~~a the~~ model of the chemical reaction.

50. (Withdrawn) The ~~article of manufacture~~ computer-readable medium of claim 45 further comprising ~~computer-readable program means~~ one or more instructions for generating a

refined model of the chemical reaction using the data gathered from the experimental platform device.

**Please add claim 51.**

51. (New) The medium of claim 1 wherein the model of the biological process comprises a block diagram model of the biological process.